

What is claimed is:

1. An image sensing device comprising:

a first optical system for forming an object image;

5 a first sensor array arranged in the approximate
image forming plane of the first optical system for
receiving the light of the object image;

a second optical system for forming an object image;

10 a second sensor array arranged in the approximate
image forming plane of the second optical system for
receiving the light of the object image;

a third sensor array disposed in proximity to the
second sensor array;

15 a signal reader for reading first photoreception
signal series from said first sensor array, second
photoreception signal series from said second sensor
array and third photoreception signal series from said
third sensor array;

20 a position detector for detecting a position of the
second photoreception signal series which corresponds to
the first photoreception signal series, a position of the
third photoreception signal series which corresponds to
the first photoreception signal series; and

an angle detector for detecting the magnitude of the angle of the object against said second sensor array based on the detected positions.

5 2. An image sensing device according to claim 1, wherein said angle detector detects angle of the object and said sensor array by means of data of relative positional relationship of said optical systems and said sensor arrays.

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3. An image sensing device according to claim 1, wherein said third sensor array is parallel to said second sensor array.

15 4. A distance measuring device comprising:
a first optical system for forming an object image;
a first sensor array arranged in the approximate image forming plane of the first optical system for receiving the light of the object image;
20 a second optical system for forming an object image;
a second sensor array arranged in the approximate image forming plane of the second optical system for receiving the light of the object image;

a third sensor array disposed in proximity to the second sensor array;

a signal reader for reading first photoreception signal series from said first sensor array, second
5 photoreception signal series from said second sensor array and third photoreception signal series from said third sensor array;

a position detector for detecting a position of the second photoreception signal series which corresponds to
10 the first photoreception signal series, a position of the third photoreception signal series which corresponds to the first photoreception signal series;

an angle detector for detecting the magnitude of the angle of the object against said second sensor array
15 based on the detected positions; and

a distance detector for calculating the object distance based on the distance between the analogous object images formed on the first and the second sensor arrays.

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5. A distance measuring device according to claim 4, wherein said distance detector includes a distance corrector for correcting the distance between analogous object images formed on the first and the second sensor

arrays to a distance when the object is in a predetermined magnitude angle against said second sensor array, and calculates the object distance using the corrected distance.

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6. An image sensing device comprising:

a first optical system for forming an object image;

a first area sensor arranged in the approximate image forming plane of the first optical system for

10 receiving the light of the object image;

a second optical system for forming an object image;

a second area sensor arranged in the approximate image forming plane of the second optical system for receiving the light of the object image;

15 a signal reader for reading first photoreception signal group from said first area sensor, second photoreception signal group from said second area sensor and third photoreception signal group from said second area sensor;

20 a position detector for detecting a position of the second photoreception signal group which corresponds to the first photoreception signal group, a position of the third photoreception signal group which corresponds to the first photoreception signal group; and

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an angle detector for detecting the magnitude of the angle of the object against said second area sensor based on the detected positions.

5 7. An image sensing device according to claim 6,
wherein said angle detector detects angle of the object
and said area sensors by means of data of relative
positional relationship of said optical systems and said
area sensors.

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8. An image sensing device according to claim 6,
wherein at least part of the second and the third
photoreception signal groups include photoreception
signals of the region of the same part of the second area
15 sensor so as to overlap with each other.

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9. A distance measuring device comprising:

a first optical system for forming an object image;

a first area sensor arranged in the approximate

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image forming plane of the first optical system for
receiving the light of the object image;

a second optical system for forming an object image;

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a second area sensor arranged in the approximate image forming plane of the second optical system for receiving the light of the object image;

5 a signal reader for reading first photoreception signal group from said first area sensor, second photoreception signal group from said second area sensor and third photoreception signal group from said second area sensor;

10 a position detector for detecting a position of the second photoreception signal group which corresponds to the first photoreception signal group, a position of the third photoreception signal group which corresponds to the first photoreception signal group;

15 an angle detector for detecting the magnitude of the angle of the object against said second area sensor based on the detected positions; and

20 a distance detector for calculating the object distance based on the distance between the analogous object images formed on the first and the second area sensors.

10. A distance measuring device according to claim 9, wherein said distance detector includes a distance corrector for correcting the distance between analogous

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object images formed on the first and the second area sensors to a distance when the object is in a predetermined magnitude angle against said second area sensor, and calculates the object distance using the corrected distance.

11. An image sensing device comprising:

an optical system for forming an object image;

a first sensor array arranged in the approximate image forming plane of the optical system for receiving the light of the object image;

a second sensor array arranged in the approximate image forming plane of the optical system for receiving the light of the object image;

a signal reader for reading first photoreception signal series from said first sensor array and second photoreception signal series from said second sensor array;

a position detector for detecting a position of the second photoreception signal series which corresponds to the first photoreception signal series; and

an angle detector for detecting the magnitude of the angle of the object against said sensor arrays based on the detected position.

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12. An image sensing device according to claim 11,
wherein said angle detector detects angle of the object
and said sensor array by means of data of relative
5 positional relationship of said sensor arrays in said
image sensing device.

13. An image sensing device according to claim 11,
wherein said second sensor array is parallel to said
10 first sensor array.

14. An image sensing device according to claim 11,
wherein said image sensing device is used in a distance
measuring device.

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15. An image sensing device comprising:
an optical system for forming an object image;
an area sensor arranged in the approximate image
forming plane of the optical system for receiving the
20 light of the object image;
a signal reader for reading first photoreception
signal group from said area sensor and second
photoreception signal group from said area sensor; and

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a position detector for detecting a position of the second photoreception signal group which corresponds to the first photoreception signal group; and

an angle detector for detecting the magnitude of the angle of the object against said area sensor based on the detected position.

16. An image sensing device according to claim 15, wherein said angle detector detects angle of the object and said area sensor by means of data of relative positional relationship of said area sensor in said image sensing device.

17. An image sensing device according to claim 15, wherein said image sensing device is used in a distance measuring device.

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